

Appl. No.: 09/820,465
Amdt. Dated December 29, 2004
Reply to Office Action of Sept. 29, 2004

REMARKS

Claims 1-37 are pending in the present application. Claims 21-24 have been rejected under 35 U.S.C. § 112, 1st paragraph, as allegedly containing subject matter not enabled by the specification. Claims 2, 3 and 21-24 have been rejected under 35 U.S.C. § 112, 2nd paragraph, as allegedly being indefinite. Claims 1-4 have been rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by U.S. Patent No. 5,889,953 issued to Thebaut. Claims 6-10, 13-15, 18-22, 25, 29-31 and 35-37 have been rejected under 35 U.S.C. § 102(e) as allegedly being anticipated by U.S. Patent No. 6,768,718 issued to Beshai. The Examiner has also rejected claim 5 under 35 U.S.C. § 103(a) as allegedly being obvious over Thebaut in view of Beshai. Claims 11 and 12 have been rejected under 35 U.S.C. § 103(a) as allegedly being obvious over Beshai in view of subject matter of which the Examiner takes official notice. Claims 16, 23 and 24 have been similarly rejected under 35 U.S.C. § 103(a) as allegedly being obvious over Beshai in view of subject matter of which the Examiner takes official notice. Claim 17 has been rejected under 35 U.S.C. § 103(a) as allegedly being obvious over Beshai in view of allegedly admitted prior art. Claims 26 and 27 have also been rejected under 35 U.S.C. § 103(a) as allegedly being obvious over Beshai in view of subject matter of which the Examiner takes official notice. Claim 28 has also been rejected as allegedly being obvious over Beshai in view of subject matter of which the Examiner takes official notice. The Examiner has also rejected claim 32 under 35 U.S.C. § 103(a) as allegedly being obvious over Beshai in view of U.S. Patent No. 6,778,531 issued to Kodialam. Lastly, the Examiner has indicated that claims 33 and 34 would be allowable if rewritten in independent form.

Applicants have amended claims 2 and 21 to address the corresponding rejections based on 35 U.S.C. § 112, 2nd paragraph. The Examiner has rejected claims 21-24 under 35 U.S.C. § 112, 1st paragraph, alleging that the specification fails to enable one of ordinary skill in the art to inject a route to the broadcast address as a host route. Applicants respectfully traverse the rejection. As amended, claim 21 states, in part, "determining the broadcast address corresponding to the remote network", and "injecting a route to the broadcast address as a host route into a routing system, wherein the route includes the first peer having reachability to the network destination." Applicant submits that the amendment to claim 21, as set forth above, obviates the rejection under 35 U.S.C. § 112, 1st paragraph, as one of ordinary skill in the art will readily recognize.

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without undue experimentation, how to inject a host route to the broadcast address of the remote network, where the host route includes the first peer having reachability to the network destination.

In addition, Applicants have amended claim 1 as follows:

1. A routing control device comprising

a routing control database storing a routing configuration policy for at least one routing system implementing an exterior gateway protocol, wherein the exterior gateway protocol identifies network routes to network destinations and aggregates, for each autonomous system, network path information;

a routing control module operable to enforce the routing configuration policy to a routing system operably connected thereto.

Applicants have also amended claims 5 and 6 to include a routing path preference evaluator operative to evaluate the paths across multiple autonomous systems. Applicants have similarly amended claim 18 to include a routing path preference evaluator operative to evaluate the paths included in BGP autonomous systems. In addition, claim 29, 35 and 37 have been amended to recite that the data collectors are operable to define and test traffic paths across multiple autonomous systems.

The references cited by the Examiner do not disclose or suggest the subject matter defined by the pending claims, as amended. As to claims 1-4, U.S. Patent No. 5,889,953 issued to Thebaut et al. discloses a network policy management architecture that facilitates the configuration of network devices within a given network. The '953 patent also describes a policy management system for virtual network services, see Col. 7:50, where policies govern access or connectivity between network endpoints. See Col. 8:18-32. Thebaut et al., however, do not disclose a system that enforces routing configuration policy on a routing system that implements an exterior gateway routing protocol as claimed.

As to claims 5-19, U.S. Patent No. 6,768,718 issued to Beshai et al. discloses a system for managing and distributing internal routing information within a single network. The '718 patent discloses a routing control node (network controller) that receives network traffic information from routing nodes, computes 'adaptive' routing information for each routing node, and transmits the routing information (usually in the form of a routing table) to each routing node.

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Unlike BGP and similar exterior gateway routing protocols where the details of the network path within a given autonomous system are abstracted, the routing nodes in Beshai have visibility and control into the details of the path (e.g., the number and identity of all intermediate nodes between two endpoints), maintaining route sets for different endpoint or node-pairs. See Col. 1:49-67; see also Col. 2:29-45; Col. 4:63-67. In the implementation described, a network controller receives traffic load or capacity metrics from the routing nodes and transmits adaptive routing information to the routing nodes. Col. 6:45-65. The Beshai reference, however, does not disclose a routing control device that manages routing policy for routing systems implementing an exterior gateway routing protocol, and that includes a path preference evaluator that evaluates paths across multiple autonomous systems. As to claims 18 and 19, the Beshai reference does not disclose or suggest the evaluation of paths included BGP autonomous systems.

Claim 20 has been amended to state that the injected path is monitored for withdrawal by a peer in the network. Beshai fails to disclose or suggest this limitation. As the Examiner alleges in the Office Action, Beshai at best teaches a system that redirects network traffic in response to the detection of an overloaded link. However, Beshai does not teach or suggest monitoring for withdrawal of a routing path by a network routing peer. Furthermore, as discussed above, Beshai is limited to operation within the context of a single autonomous system and does not apply a preferred path that includes at least one remote autonomous system.

Beshai also fails to disclose or suggest the subject matter of claims 21-24. For example, Beshai fails to teach a system that identifies the broadcast address of the remote network to which the network destination is connected. Furthermore, Beshai fails to teach injecting a route to the broadcast address as a host route, and testing the injected route using the broadcast address. Furthermore, Beshai does not disclose a system that tests network path metrics. Rather, Beshai merely receives capacity or load information from routing nodes. As to claim 22, Beshai does not disclose or suggest monitoring for withdrawal of applied routes by a peer of the routing system.

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As to claims 25-30 and 35-37, Beshai discloses a system that operates within the context of a single autonomous system (AS), and does not disclose a plurality of data collectors that test and define paths across autonomous systems. Lastly, as to claims 31-34, Beshai fails to disclose or suggest a system that tests the performance of the path relative to at least one of round trip time, jitter and packet loss. Lastly, U.S. Patent No. 6,778,531 issued to Kodialam et al. fails to disclose or suggest the limitations of claim 32. The '531 patent discloses a system for routing of multicast data based on a multicast routing tree. While Kodialam et al. discuss the identification of ingress and egress points associated with a given network, they do not disclose or suggest the determination of the ingress and egress interfaces of the intermediate nodes in a given path.

In light of the foregoing, Applicant believes that all currently pending claims are presently in condition for allowance. Applicant respectfully requests a timely Notice of Allowance be issued in this case.

If the Examiner believes that a telephone conference would expedite prosecution of the present application, the Examiner is invited to call the undersigned at the telephone number set forth below.

Respectfully Submitted,
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By



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